

CLAIMS

1. Apparatus for visually inspecting soldered joints made on a soldered object, **characterized by:**

- 5 - a camera for recording at least one image of the soldered object on which the soldered joints to be soldered are present;
- a computing device connected to the camera for receiving the signals from the camera that represent the
10 images recorded by the camera, the computing device being arranged for comparing the signals with signals which are representative of correct soldered joints; and
- a handling device for moving the soldered objects on which the soldered joints to be inspected have been made to a
15 position within the viewing range of the camera.

2. Apparatus according to claim 1, **characterized in that** said the handling device is arranged for moving the soldered object with respect to the camera.

3. Apparatus according to claim 1 or 2, **characterized in**
20 **that** the handling device is arranged for moving the soldered object in a plane transversely to the optical axis of the camera..

4. Apparatus according to any one of the preceding claims, **characterized in that** the handling device is arranged
25 for moving the soldered object in the plane transversely to the optical axis of the camera.

5. Apparatus according to any one of the preceding claims, **characterized in that** the handling device is arranged for tilting the soldered object about a first axis extending
30 perpendicularly to the optical axis of the camera.

6. Apparatus according to claim 5, **characterized in that** the handling device is arranged for tilting the soldered

object about a second axis extending perpendicularly to the optical axis of the camera and perpendicularly to said first axis.

7. Apparatus according to any one of the preceding
5 claims, **characterized in that** the apparatus is arranged for moving the soldered object to a second position in response to a comparison of the image obtained in the first position of the soldered object with a first criterion stored in the computing device and subsequently comparing the image
10 obtained in said second position with a second criterion.

8. Apparatus according to claim 7, **characterized in that** the apparatus is arranged for reducing the distance between the camera and the soldered object if the first criterion is not met.

15 9. Apparatus according to claim 7 or 8, **characterized in that** the apparatus is arranged for tilting the soldered object about an axis extending perpendicularly to said optical axis if the first criterion is not met.

10. Method for visually inspecting soldered joints,
20 which method comprises the following steps:

- moving the soldered objects on which the soldered joint to be inspected is present to a position within the viewing range of the camera;
- recording an image of the soldered joint to be
25 inspected;
- comparing a signal representing the image with a reference signal representing an assessment criterion; and
- delivering a decision signal on the basis of said comparison.

30 11. Method according to claim 10, **characterized in that** the position of the object relative to the camera is changed in dependence on the decision signal.

12. Method according to claim 11, **characterized in that** the angle between the optical axis of the camera and the soldered object is changed in dependence on the decision signal.

- 5 13. Method according to claim 11 or 12, **characterized in that** the distance between the camera and the soldered object is changed in dependence on the decision signal.